

Application No.: 10/564,674
Paper dated October 28, 2010
In Reply to USPTO Correspondence of October 18, 2010
Attorney Docket No.: 0470-060131

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application No. : 10/564,674 Confirmation No. : 1707
Applicants : MARCEL WIJLAARS et al.
Filed : 7/15/2004
Title : TISSUE SUBSTITUTE MATERIAL
Group Art Unit : 1615
Examiner : Caralynne Helm
Customer No. : 28289

Mail Stop Appeal Brief - Patents

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO OFFICE COMMUNICATION

Sir:

In response to the Notification of Non-Compliant Appeal Brief dated October 18, 2010, wherein the United States Patent and Trademark Office requested that the Applicants cite the application as originally filed as opposed to the published patent application, Applicants submit substitute pages 4-6 of the Appeal Brief under 37 C.F.R. § 41.37.

I hereby certify that this correspondence is being electronically submitted to the United States Patent and Trademark Office on October 28, 2010.

10/28/2010
Date

Signature

Mary Ann Mulvihill

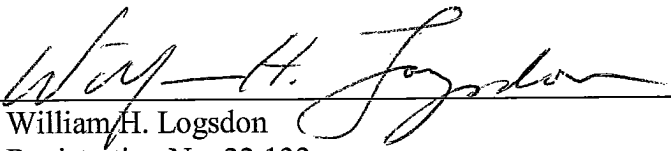
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In substitute pages 4-6, Applicants have replaced citations to the application as published with citations to the application as originally filed. Applications respectfully request that pages 4-6 of the Appeal Brief filed on October 11, 2010 be replaced with pages 4-6 that are attached hereto.

Respectfully submitted,

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SUMMARY OF CLAIMED SUBJECT MATTER

The above-captioned application contains two pending independent claims, claims 8 and 15. A summary of claims 8 and 15 is provided below. Applicants do not separately argue that any dependent claim is patentable for any reason independent of the reasons that claims 8 or 15 is patentable. Accordingly, Applicants do not provide a summary for any dependent claim.

Claim 8 is directed to a material for cartilage-like material substitution, comprising a fibre-reinforced polymerized hydrogel.¹ The polymerized hydrogel contains 10-70% (m/m) swellable fibres (based on the dry matter).² The length of the fibres is at least a millimeter.³ Additionally, 1-5% (m/m) (based on the dry matter) of a substance that contains ionized groups has been added to said polymerized hydrogel.⁴ The swellable fibres have sucked up at least one monomer solution prior to polymerization of the hydrogel.⁵

Claim 15 is directed to a material for cartilage-like material substitution, comprising a fibre-reinforced polymerized hydrogel.⁶ The polymerized hydrogel contains 10-70% (m/m) swellable fibres (based on the dry matter).⁷ The length of the fibres is at least a millimeter.⁸ One to five percent (m/m) (based on the dry matter) of a substance that contains

¹ U.S. Pat. App. No. 10/569,674 (as originally filed) at page 1, lines 18-21; page 2, lines 11-16; page 2, lines 17-21; and page 2, lines 24-30.

² U.S. Pat. App. No. 10/569,674 (as originally filed) at page 1, lines 18-21; page 2, lines 1-6; page 2, lines 7-10; and page 2, lines 31-33.

³ U.S. Pat. App. No. 10/569,674 (as originally filed) at page 1, lines 22-34.

⁴ U.S. Pat. App. No. 10/569,674 (as originally filed) at page 1, lines 18-21; page 1, lines 22-34.

⁵ U.S. Pat. App. No. 10/569,674 (as originally filed) at page 3, lines 1-7.

⁶ U.S. Pat. App. No. 10/569,674 (as originally filed) at page 1, lines 18-21; page 2, lines 11-16; page 2, lines 17-21; and page 2, lines 24-30.

⁷ U.S. Pat. App. No. 10/569,674 (as originally filed) at page 1, lines 18-21; page 2, lines 11-16; page 2, lines 7-10; and page 2, lines 31-33.

⁸ U.S. Pat. App. No. 10/569,674 (as originally filed) at page 1, lines 22-34.

ionized groups was added to said polymerized hydrogel.⁹ The swellable fibres comprise at least one monomer solution.¹⁰

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

Applicants respectfully request that the following rejections be reviewed on appeal and reversed:

1. Claims 8-9 and 12-15 stand rejected as obvious under 35 U.S.C. §103(a) over Malmonge¹¹ in view of Slivka¹², Pissis¹³ and Young¹⁴.
2. Claims 8 and 10-11 stand rejected as obvious under 35 U.S.C. §103(a) over Malmonge in view of Slivka, Pissis and Young as applied to claims 8-9 and 12-15 above, and further in view of Kou¹⁵.

⁹ U.S. Pat. App. No. 10/569,674 (as originally filed) at page 1, lines 18-21; page 1, lines 22-34.

¹⁰ U.S. Pat. App. No. 10/569,674 (as originally filed) at page 3, lines 1-7.

¹¹ Malmonge *et al.*, "Artificial Articular Cartilage: Mechano-electrical Transduction under Dynamic Compressive Loading," ARTIFICIAL ORGANS (2000) 24(3): 174-178 ("Malmonge").

¹² Slivka *et al.*, "Porous, resorbable, fiber-reinforced scaffolds tailored for articular cartilage repair," TISSUE ENGINEERING (2001) 7(6): 767-780 ("Slivka").

¹³ Pissis *et al.*, "Poly(hydroxyethyl acrylate) – Nylon 6 nanocomposites. Dielectric and water sorption properties," 10TH INT'L SYMP. ON ELECTRETS (1999): 561-564.

¹⁴ Young *et al.*, "High-strength, ultra-thin and fiber-reinforced pHEMA articial skin," Biomaterials (1998) 19: 1745-1752 ("Young").

¹⁵ Kou *et al.*, "Modeling drug release from dynamically swelling poly(hydroxyethyl methacrylate-co-methacrylic acid) hydrogels," J. CONTROLLED RELEASE (1990) 12: 241-250 ("Kou").

ARGUMENT

Prior art replacement cartilage-like tissue had weak swelling behavior and inadequate strength and toughness.¹⁶ This is particularly important in respect to the ability of cartilage-like tissue to swell when the composition of the fluid (water/salt) surrounding the tissue changes.¹⁷ The invention addresses this problem by using a cartilage-like tissue containing 10-70% (m/m) swellable fibres. The length of the fibres is at least a millimeter. An example of a swellable fibre is one that contains polyurethane material.¹⁸ The material also contains 1-5% (m/m) of a substance that contains ionized groups that is added to the polymerized hydrogel. The ionised groups provide a Donnan osmotic pressure in the hydrogel that pretensions the fibres.¹⁹ The substance that contains ionised groups is important in maintaining the swelling ability of the material.²⁰

Initially, the Examiner rejected the claims as obvious over Malmonge, Pissis and Young (and optionally in further view of Kou).²¹ After only considering the Huyghe's Declaration, the Examiner saw the error in her rejection and correctly withdrew it, only to assert a new rejection based on the same references with the addition of Slivka. Thus, claim 8 stands rejected as obvious over Malmonge, Pissis Young and Slivka; and claim 15 stands rejected as

¹⁶ U.S. Pat. App. No. 10/569,674 (as originally filed) at page 1, lines 8-14.

¹⁷ U.S. Pat. App. No. 10/569,674 (as originally filed) at page 1, lines 8-14.

¹⁸ See U.S. Pat. App. No. 10/569,674 (as originally filed) at claim 13.

¹⁹ U.S. Pat. App. No. 10/569,674 (as originally filed) at page 1, lines 22-34.

²⁰ U.S. Pat. App. No. 10/569,674 (as originally filed) at page 1, lines 22-34.